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ABSTRACT

Twenty 10th grade students participated in a study designed to identify differences in the ways developing writers use words to create written texts. Essays written by the students were holistically evaluated and then analyzed for the types and the number of lexical cohesive ties used and the nature of the grammatical subject, or focus, of each clause. The analysis of lexical cohesion in the 9 high-rated and 11 low-rated essays showed large differences. In the low-rated essays, the total number of lexical ties constituted 15% of the total number of words, while the total number of words entering into lexical ties constituted 25% of the total number of words. In the high-rated essays, the total number of lexical ties constituted 21% of the total number of words, while the total number of words entering into lexical ties constituted 44% of the total number of words. The analysis of the grammatical subjects of clauses also revealed large differences between the two groups of writers. Of the total number of 121 clauses in the low-rated essays, 81% were pronominal in nature. In contrast, of the 154 subjects of clauses in the high-rated essays, only 51% were pronominal. The results suggest that the writers of the high-rated essays were clearly using words to create meaning in different ways than were the writers of the low-rated papers. (Copies of essays and their ratings are appended.) (RL)

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EXAMINING WORD USE TO ASSESS GROWTH IN ESSAY WRITING

Sandra Stotsky

Introduction

In recent years, many researchers have examined syntactic aspects of growth in writing. T-unit measures have provided illuminating indices of differences in syntactic growth from grade level to grade level and between good and poor writers at one grade level. However, relatively little attention has been paid to lexical aspects of growth in writing. Moreover, the few studies that exist have tended to use statistically derived measures, such as word frequency counts, type-token ratios, or indices of vocabulary diversity.[1] While these studies have found that good writing displays greater diversity in vocabulary than does poor writing and that the use of more different words is one aspect of growth in linguistic meaning in writing, the measures used in these studies have not provided information on how words are used to create meaning in writing and how they are related to each other. Nor is it clear from these studies how the use of more different words contributes specifically to growth in writing or to the quality of writing. As a result, we have a limited understanding of the nature and progress of semantic development in written language.

The purpose of this paper is to show how an examination of the ways in which developing writers use words to make meaning and to create semantic relationships in their essays might offer us a more insightful understanding of written language development and a pedagogically more useful way to assess growth in essay writing than we now seem to have. In order to do so, this paper presents and discusses the results of a small exploratory study designed to identify differences in some of the ways in which developing writers use words to create written texts. Specifically,

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this study examined high- and low-rated essays written by upper secondary level students to determine: (1) the nature of the grammatical subject, or focus, of each clause and (2) the types and the number of lexical cohesive ties used. The assumption underlying the analysis of high- and low-rated essays from one grade level to discern developmental trends is that the differences between these two groups of essays would suggest the direction that the writers of the low-rated essays probably need to move in to improve their writing.

In the first part of this essay, I describe how the writing samples were selected, why these aspects of word use were examined, and how the samples were scored. In the second part, I present the results of the study and suggest what they may indicate about the nature and development of written language. The essay concludes with a discussion of the implications of these findings for theoretical models of the relationship between oral and written language and for a working hypothesis of what constitutes growth in essay writing.

Selection of the Writing Samples

The essays used in this study were written for a holistic evaluation of writing by Grade 10 students in a small town high school at the end of the school year. All students had been asked to take and defend a position on whether the granting of a high school diploma should be contingent upon a student's tested competence in all the basic skills. (See the Appendix for the exact wording of the topic.) The 11 papers judged lowest in composition quality (those receiving a rating of 2) and the 8 papers judged highest in composition quality (those receiving a rating of 8) were selected for analysis.

There were several reasons for using these essays. First, the difference between what is judged good and poor at one grade level by experienced teachers of composition often provides more pedagogically useful information than do differences between older and younger writers. Secondly, since the major focus of composition teaching at higher levels of education is the kind of discourse that presents information and ideas, it seemed to be more useful to explore the development of linguistic meaning in argumentative or expository essay writing rather than in

fictional or personal narrative writing. Finally, it seemed that results from a small exploratory study might be more generalizeable if one examined the writing of students from a small, relatively homogeneous community with a stable school population rather than from a large, heterogeneous community with a transient school population. Most of these students have probably attended both one of the town's two elementary schools and its junior high school and, thus, have had the same teachers. Differences in their writing are less likely to reflect differences in community values or school curricula and are more likely to reflect normal variation in a native English-speaking population.

Aspects of Word Use Examined

The two aspects of word use I chose to examine were: (1) the types and the number of lexical cohesive ties used and (2) the nature of the grammatical subject, or focus, of each clause. Cohesion is a concept developed by Michael Halliday and Ruqaiya Hasan to refer to the semantic relationships that link parts of sentences, sentences, and paragraphs to each other, thereby creating a sense of connected discourse.[2] Lexical cohesion, the semantic relationships created by a writer's choice of lexical items, is clearly a significant aspect of word use to examine in essay writing since lexical cohesive ties appear to constitute the majority of cohesive ties in essays, according to a study of popular scientific discourse by Robert Hopkins and a study by Stephen Witte and Lester Faigley of essays written by college freshmen.[3] However, this study did not use the scheme for analyzing lexical cohesion proposed by Halliday and Hasan, as their scheme is based on an analysis of samples of only conversational and literary discourse. In a recent essay, I demonstrated how their scheme did not account clearly and completely for all types of lexical cohesion in expository essay writing and proposed a modification and reorganization of their scheme for application to exposition.[4] This new scheme was used for this study. It consists of two categories, as did theirs, but in the first, words are related only through systematic semantic relationships, and in the second, only through collocation. These categories are defined, outlined, and exemplified below.

I. Semantically related words: a type of cohesion in which a lexical element (or a group of lexical elements) is systematically related to a previous element (or group of elements) through:

1. Repetition: e.g., test/test; high school diploma/high school diploma
2. Synonymy or near-synonymy: e.g., difficult/hard
3. Opposition or contrast: e.g., simple/difficult
4. Inclusion as a superordinate, subordinate, or coordinate member in an ordered or unordered set (general or specific terms): e.g., worker/teacher/janitor/cook
5. Derivation or repetition of a derivational element: e.g., benefit/beneficial; employer/worker

II. Collocationally related words: a type of cohesion in which one lexical element is related to another only through frequent co-occurrence in similar contexts: e.g., worker/skills/job

Part of the rationale for this new scheme was to distinguish systematic associations in the language from contextual ones; further, it seemed that a more comprehensive scheme might facilitate informative distinctions. In Marion Crowhurst's study of cohesion in the argumentative essays of students in Grades 6, 10, and 12, all lexical ties, although originally classified according to Halliday and Hasan's taxonomy, were collapsed for analysis into just two categories, "same lexical item" and "other lexical item," because all types other than repetition contained too small a number of examples for meaningful analysis.[5] Use of a more comprehensive and suitable scheme for essay writing might have enabled Crowhurst to make further distinctions among lexical ties across grade levels than her study showed. Only "other lexical items" distinguished among all three grade levels.

The other aspect of word use examined in this study was suggested by Lee Odell.[6] He claimed that we can learn a great deal about the way a writer perceives and thinks by examining the words used as the grammatical subject, or focus, of each clause. He further suggested that an examination of the changes in the grammatical

focus of each clause could also help us determine what intellectual processes students are using in their writing. Andrea Lunsford, in a study of the essays written by 320 basic and skilled writers for a college placement examination, analyzed in detail the grammatical focus of each clause in an essay written by one writer in each group.[7] She found marked differences between the types of words chosen by each writer, particularly in the use of personal pronouns and abstract concepts. It was therefore expected that an examination of this aspect of word use would be highly informative.

Scoring Procedures

All the high- and low rated essays were analyzed to determine the grammatical subject of each clause. Only six high- and low-rated compositions were analyzed for lexical cohesive ties; the remainder were either so fluent or so incoherent or non-fluent that counts of lexical ties from these essays would have distorted the mean scores obtained from the other essays. To establish reliability, decision rules were made about how to count the number of words in an essay and how to tally the ties created by repetition. Any idiomatic expression, such as get along, do away with, high school, as well as an individual word not used in an idiomatic expression, was counted as one word. Only identical words or words varying in inflectional or comparative endings, such as job/jobs, giving/given, fair/fairer, were counted as a repetition; following Hans Marchand's definition, words related as derivatives were considered to be different words and classified as a separate type of cohesion as outlined above.[8] A repeated phrase (e.g., one final exam), as well as a repeated word or idiomatic expression, was counted as only one repetition. Ties both within and across sentences in the selected essays were scored; words contributing especially to collocational cohesion often appear within one sentence. Also tallied were the total number of words, the total number of different words, and the total number of words entering into lexical ties in each essay. The reason for the last count is as follows: a count of the total number of lexical ties in an essay does not tell us whether these ties are created mainly

by single words or also by longer conceptual units. In order to capture this distinction, one must examine both the total number of cohesive ties and the total number of words entering into cohesive ties as proportions of the total number of words in an essay. The Appendix shows how lexical ties were scored for two low- and two high-rated essays.

Findings and Discussion

An examination of the grammatical subjects of each clause revealed large differences between the low-rated and the high-rated essays. The data from this analysis appear in Table 1. Of the total number of 121 clauses in the low-rated essays, 98 subjects (or 81%) were pronominal in nature. Of those 98 pronominal subjects, 92 were personal or indefinite pronouns. Of these 92 personal or indefinite pronouns, you was the subject of 26 clauses, I the subject of 20 clauses, and we the subject of 10 clauses. Altogether, 46% of the subjects of all clauses in the low-rated essays were you, we, or I. Fifteen subjects (or 12%) were personal nouns, such as students, teacher, kids, and only 8 subjects (or 6%) were non-personal in nature. The words used as non-personal subjects in the low-rated essays are listed in Table 1.

In contrast, of the total number of 154 subjects of clauses in the high-rated essays, only 78 (or 51%) were pronominal in nature. Of these 78 pronominal subjects, only 54 were personal or indefinite pronouns. Of these 54 personal or indefinite pronouns, you was never the subject of a clause, I was the subject only 7 times, we was the subject only once. Altogether 33 subjects (or 21%) were personal nouns, and 43 (or 28%) were non-personal in nature. The words used as non-personal subjects in the high-rated essays are also listed in Table 1.

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Insert Tables 1 and 2 about here

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The analysis of lexical cohesion in the six high- and low-rated essays also showed differences. The data from this analysis appear in Table 2. In the low-rated essays, the total number of lexical ties constituted 1% of the total number of words, while the total number of words entering into lexical ties constituted

2% of the total number of words. On the other hand, in the high-rated essays, the total number of lexical ties constituted 21% of the total number of words, while the total number of words entering into lexical ties constituted 44% of the total number of words. While almost all essays contained many examples of repetition, the low-rated ones contained few examples of other types of systematic semantic ties. The high-rated ones tended to contain at least several examples of these other types. The total number of all systematic semantic ties constituted 6% of all lexical ties in the low-rated essays, whereas they constituted 79% of all lexical ties in the high-rated essays. In the high-rated essays, 19 double ties were found; only 1 was found in the low-rated essays. The low-rated essays contained on the average 82 words and 54 different words; the high-rated essays contained on the average 145 words and 84 different words. Inter-sentence ties consituted 66% of the total number of lexical ties in the low-rated papers and 71% in the high-rated papers; this small difference suggests that the overall ratio of inter-sentence to intra-sentence ties may not have developmental significance, although the ratio for specific types of ties may have some significance. Sample size and the number of running words may not be large enough to warrant any generalizations yet.

Examining both the types and the number of lexical cohesive ties and the nature of the grammatical subject of the clause in these essays seems to tell us more about written language development than an examination of each could alone. Most of the ideas expressed in the high- and low-rated essays were similar; all these students have fundamentally the same understanding of the world in which they live. Yet, the writers of the high-rated essays were clearly using words to create meaning in different ways from the writers of the low-rated essays. What were the writers of the high-rated essays doing? While it is true that they were using relatively more different words, they were using relatively many more of them as the grammatical subjects of clauses. Moreover, they were predicating more often about objects or concepts than about people. In addition, they were creating proportionately more systematic semantic ties within and across sentences. Above all, longer conceptual units were being used to create cohesive ties. These aspects of word use were reflected

in their essays in a number of ways. The high-rated essays generally contained a clear introduction that referred to the topic, an explicit statement of the writer's position, a logical sentence-by-sentence development of the reason(s) for this position, and an explicit concluding statement for the argument. This produced a great deal of repetition. The writers of the high-rated essays also elaborated their arguments more. The higher number of collocational ties in the high-rated essays seemed to reflect the fact that more specific concepts were offered to express an idea; the higher number of synonymous, contrasting, or inclusive relationships seemed to reflect the fact that many of these ideas were clarified through examples and details. The derivational ties reflected the writer's awareness and use of lexical variations for achieving both continuity in meaning and stylistic flexibility simultaneously, a function that derivatives serve, as I have suggested in a previous essay.[9]

The writers of the low-rated essays used a smaller number of different words, with few cohesive ties other than repetition connecting their ideas. In several essays, the writer failed to develop even one argument logically. In several others, one or two reasons supporting the position taken by the writer were simply stated and not developed at all. Few low-rated essays had explicit introductory statements addressing the topic or explicit conclusions to an argument; in several, the conclusion was simply a reiteration of the writer's original position. Overall, word choice was extremely simple and included an extremely high proportion of pronouns of various kinds. It should be noted, however, that the coherence and organization of some low-rated essays was not so inferior to that of some high-rated essays as the disparity in their ratings would suggest. Poor control of sentence structure and written language conventions probably contributed as much to the rating a low-rated paper received as did its relative lack of structure and coherence.

In the low-rated essays, common nouns that referred to people and pronominal references to the writer or to a partner in a dialogue were most often used as subjects of clauses. Few subjects were nouns that referred to objects or concepts. In other words, the writers of the low-rated essays tended to predicate about them-

selves, their audience, or people, not about non-personal concepts. Their heavy use of first and second person pronouns suggests that they viewed essay writing more as an engagement in a dialogue with another speaker than as a transaction with a reader.

As an explanation of some of their findings, Witte and Faigley suggest that the writers of the low-rated papers do not have "working vocabularies capable of extending, in ways prerequisite for good writing, the concepts and ideas they introduce in their essays" (p. 198). However, lack of a working vocabulary may not necessarily be the whole explanation for the failure of the writers of the low-rated papers to elaborate their ideas. If we examine the words used as the grammatical subjects of clauses in the high-rated essays in this study, it seems probable that all these words are within the reading vocabulary of all the writers of the low-rated essays in this study; moreover, many of them were used in these essays in other than subject position. Yet, the writers of these low-rated essays rarely used them as the focus for their thinking. Instead, they or their audience tended to be the focus for their statements through the use of personal pronouns--the typical subjects of conversational utterances. Overuse of the structures of conversational utterances may have far-reaching consequences. Roger Cayer and Renee Sacks, in a study of basic writers at the college level, noted that a major difference between oral and written language is the greater expansion in writing of the subject portion of the utterance.[10] John Mellon also noted that growth in dominant NPs (the subjects or objects of main-clause verbs or the objects within prepositional phrases modifying main-clause verbs) is a characteristic of growth in writing and, according to Mellon, reflects growth in conception.[11] The use of personal and indefinite pronouns as the subjects of clauses almost automatically precludes the expansion of the subject portion of an utterance and, thus, may

preclude some of that growth. It may also preclude many possibilities for lexical cohesion as well.

Too much reliance by developing essay writers on conversational structures may retard growth in writing in another way. Lunsford found in her research that basic writers used a vocabulary characterized "by a high percentage of personal pronouns, especially those relating to first person, by a relatively low degree of nominalization, and by the use of concrete diction and simple concepts" (p. 287). These writers showed a "tendency to egocentricity, to focus in their writing most often on themselves" (p. 285). Although Witte and Faigley did not note the types of words used by the writers of the low-rated essays in their research, they noted that these writers "seem to lack in part the ability to perceive and articulate abstract concepts with reference to particular instances, to perceive relationships among ideas, and to reach beyond the worlds of their immediate experience" (p. 199). It is possible that the use of an abstraction or generalization to govern the development of one's ideas and the mental playing with abstract verbal concepts that is characteristic of higher stages of essay writing may have its intellectual roots in the simple act of focusing on non-personal objects or concepts as the subjects of predicates. Writers who appear to rely on models derived primarily from dialogue when they attempt to structure expository statements may be limiting their ability to use concepts and objects as the initiators of actions in their writing. As a consequence, they may also be limiting their ability to conceptualize ideas or objects manipulating, modifying, or otherwise influencing other ideas or objects in their writing. The failure of poor writers to develop and elaborate ideas in their writing may be caused in part by a meager vocabulary. It may also be caused in part by the ways in which they are accustomed to use the words they know.

The writers of the low-rated essays in this study, and others similar to them, seem to need more familiarity with the patterns of formal written English. Where are the models for them? The social context for the speech act is not apt to pro-

vide them; conversation is, in fact, not intended to serve the same purposes as written texts and is therefore not designed to elicit its semantic and structural features. As Jean Simon suggests in his five-year study of written language development, the models can be found primarily in the written language the student is provided to read.[12] Perhaps basic writers need more reading experiences with well-written exposition. Although there is little research on this topic, the little that has been done suggests that poor writers are apt to be poor readers.[13] Perhaps basic writers also need to be guided away from the structures of conversational utterances by sensitive and perceptive teachers who can help them frame their ideas in more intellectually beneficial ways. Probably they need both increased exposure to well-written formal English and carefully structured and sequenced writing assignments.

Implications for Assessing Growth in Essay Writing

There appear to be two basic theories about the relationship of written to oral language. Psycholinguistic theories view writing as primarily a derivative of speech and written language as an alternate but parallel mode of oral language.[14] According to this theory, writing seems to be equivalent to speaking once children learn decoding and encoding skills. Another theory, suggested by the work of Lev Vygotsky, Alexander Luria, and Jerome Bruner, among others, views written language as qualitatively different from oral language, arising from the same sources, sharing some common elements, but requiring other resources for its full development.[15] According to this theory, writing, although initially dependent upon oral language while children learn decoding and encoding skills, becomes increasingly less dependent on oral language and more directly influenced by reading.

Results of this study suggest that good essay writing is not an alternate but parallel mode of oral language but a fundamentally different way of creating meaning. At higher levels of reading and writing, some features of oral language seem to account for many of the problems poor writers have. Psycholinguistic theory clear-

ly accounts for the influence of speech on writing; however, it does not seem to account for the production of structural features of written language that are not characteristic of speech. Thus, the results of this study further suggest that a useful model of language development will need to differentiate oral from written language and specify how each may influence the other positively or negatively at different stages of development.

While oral language may be the earliest source of semantic development, written language may be both the source and the extension of semantic development at higher levels of intellectual growth by a different means and for different purposes. Bruno Snell points out that the ancient Greeks changed the structure of their natural language "not only through the introduction of new words but also through the change of meaning in old words and through the change in syntax" (p. 52) in order to forge a language capable of explaining the phenomena of the world, i.e., a language for philosophy and science. According to Snell, philosophical and scientific discourse in other languages lives "by virtue of taking over, translating and elaborating upon the original Greek" (p. 50).[16] The ability to write academic discourse is critical for developing knowledge as well as for transmitting it. As Mina Shaughnessy has eloquently suggested, we should be teaching all students in a democracy "to compose and perfect their thoughts in the medium that allows for the greatest independence of mind and exacts the greatest effort at articulation."[17] To achieve this goal, we need to have a better understanding of what constitutes growth in writing.

Clearly, the use of an increasingly larger vocabulary is a significant indication of growth in writing. However, the ways in which these words are used may be just as significant an indication of growth. In expository essay writing, we are dealing with a language that is, above all, composed, not simply expressed. The differences between the high- and low-rated essays in this study suggest a way of looking at the concept of growth in writing that seems to touch upon the very es-

sence of the composing process, that is, the putting together and the shaping of ideas and language for others to read. In contrast to the writers of the low-rated essays in this study, the writers of the high-rated essays readily predicated about non-personal objects or concepts, and their papers were just beginning to show the variety of interconnections that characterizes well-organized and well-developed essays. These trends suggest that growth in essay writing is growth in the ability to present information and ideas with an increasingly larger number of increasingly interconnected concepts. Thus, a developing writer's ability to compose longer and longer pieces of well-connected discourse should reflect growth in the complexity of this network. In fact, poor writers may write so little not only because they have smaller vocabularies but also because they cannot yet use different kinds of cohesive relations to control extended stretches of expository discourse. It seems reasonable to propose that the more that writers can conceptualize to predicate about, the more interconnections there can be. The larger the number of different words that are used in an essay, the more lexical cohesive ties there can be. And the more this network of semantic ties develops, with increasingly longer conceptual units entering into single or multiple ties, the better organized and developed the essay should be. This hypothesis would appear to be amenable to empirical validation through longitudinal case studies of developing writers.[18]

Ann Berthoff suggests that our means of making meaning includes not only the ideas we think with but our language as well and that composition teachers need to think of language as an instrument of knowing.[19] Examining the ways in which developing essay writers use words to make meaning might tell us how well they are learning to use a language that did not evolve with man's mind but was created by it as an instrument for knowing ourselves and the world in which we live in a new and different way.

Notes

[1] For example, frequency counts were used by Henry Rinsland in A Basic Vocabulary of Elementary School Children (New York: Macmillan Co., 1945) and by Robert Hillerich in A Writing Vocabulary of Elementary Children (Springfield, IL: Charles C. Thomas, 1978), the two most recent compilations of children's writing vocabulary; no comparable compilations exist at the secondary or college level. Among the measures used by Cary Grobe in "Syntactic Maturity, Mechanics, and Vocabulary as Predictors of Quality Ratings," Research in the Teaching of English, 15 (February 1981), 75-86, were indices of vocabulary diversity and type-token ratios.

[2] Michael A.K. Halliday and Ruqaiya Hasan, Cohesion in English (London: Longman Group Ltd., 1976).

[3] Robert Morris Hopkins, "Popular Scientific Discourse: A Rhetorical Model for Teaching Writing and Reading," Diss. University of Missouri-Columbia, 1979, and Stephen Witte and Lester Faigley, "Coherence, Cohesion, and Writing Quality," CCC, 32 (May 1981), 189-204.

[4] Sandra Stotsky, "Types of Lexical Cohesion in Expository Essay Writing: Implications for Developing the Vocabulary of Academic Discourse," CCC (forthcoming).

[5] Marion Crowhurst, "Cohesion in Argumentative Prose Written by Sixth-, Tenth- and Twelfth-Graders," paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, California, April 1981.

[6] Lee Odell, "Measuring Changes in Intellectual Processes as One Dimension of Growth in Writing," in Evaluating Writing: Describing, Measuring, Judging, eds. Charles R. Cooper and Lee Odell (Urbana, IL: National Council of Teachers of English, 1977).

[7] Andrea Lunsford, "The Content of Basic Writers' Essays," CCC, 31 (October 1980).

[8] Hans Marchand, The Categories and Types of Present-Day English Word-Formation, 2nd ed. (Munich, Germany: C.H. Beck, 1969).

[9] See Note 4.

[10] Roger Cayer and Renee Sacks, "Oral and Written Discourse of Basic Writers: Similarities and Differences," Research in the Teaching of English, 13 (May 1979), 121-128.

[11] John Mellon, "Issues in the Theory and Practice of Sentence Combining: A Twenty-Year Perspective," in Sentence Combining and the Teaching of Writing, eds. Donald Daiker, Andrew Kerek, and Max Morenberg (University of Akron and University of Central Arkansas, 1979).

[12] Jean Simon, "Evolution Genetique de la Phrase Ecrite chez l'Ecolier," Diss. University of Paris, 1970.

[13] For example, see Walter Loban, Language Development: Kindergarten through Grade Twelve (Urbana, IL: National Council of Teachers of English, 1976). I was informed by a teacher familiar with all the students whose writing was examined in this study that most of the writers of the low-rated essays were of below average reading ability but were not in special education classes.

[14] James Moffett and Betty Jane Wagner, Student-Centered Language Arts and Reading, K-13, 2nd ed. (Boston: Houghton Mifflin, 1976); Frank Smith, "The Relation between Spoken and Written Language," in Foundations of Language Development, Vol. 2, eds. Eric Lenneberg and Elizabeth Lenneberg (New York: Academic Press, 1975); Kenneth Goodman, "Behind the Eye: What Happens in Reading," in Theoretical Models and Processes of Reading, 2nd ed. eds. Harry Singer and Robert Ruddell (Newark,DE: International Reading Association, 1976).

[15] Lev Vygotsky, Thought and Language, trans. Eugenia Hanfmann and Gertrude Vakar (Cambridge, MA: M.I.T. Press, 1962.); and Mind in Society: The Development of Higher Psychological Processes, eds. Michael Cole, Vera John-Steiner, Sylvia Scribner, and Ellen Souberman (Cambridge, MA: Harvard University Press, 1978); Alexander Luria, "Speech Development and the Formation of Mental Processes," in A Handbook of Contemporary Soviet Psychology, eds. Michael Cole and Irving Maltzman (New York:

Basic Books, 1969); Jerome Bruner, Rose Olver, and Patricia Greenfield, Studies in Cognitive Growth (New York: John Wiley and Sons, 1966).

[16] Bruno Snell, "The Forging of a Language for Science in Ancient Greece," Classical Journal, 55, No. 2 (1960), 50-60.

[17] Mina Shaughnessy, "The English Professor's Malady." Address delivered at the Association of Departments of English Conference, Albany, New York, June 1977. Reprinted in Journal of Basic Writing, 3 (Fall/Winter 1980), 91-97.

[18] An analysis of cohesive ties to assess growth should probably include several other aspects of cohesion: the number and types of conjunctive ties and the number of immediate, mediated, or remote ties. Crowhurst's findings contradict Witte and Faigley's findings with respect to these variables. Crowhurst found that long distance ties were more characteristic of the older students in her study and that the number of conjunctive ties did not discriminate among grade levels; Witte and Faigley found that their low-rated essays contained a higher proportion of long-distance ties than did their high-rated essays and that their high-rated essays contained many more conjunctive ties than did the low-rated essays. Crowhurst suggests that an examination of what connectives are used may be more informative than simply noting the number of different connectives used. I would also add that certain long-distance ties may be powerful indicators of the writer's overall planning for an essay. The inclusive tie connecting sentences 1 and 4 in the first essay in the Appendix alone tells us that the writer had conceptualized--and/or worked out--the entire paragraph as a semantic unit. Perhaps the type of lexical tie and the number of sentences it spans need to be considered together for a clearer indication of the significance of immediate or long-distance ties.

[19] Ann E. Berthoff, The Making of Meaning (Montclair, NJ: Boynton/Cook Publishers, Inc., 1981), p. 109 .

TABLE I

TYPES OF GRAMMATICAL SUBJECTS OF CLAUSES IN LOW-RATED AND HIGH-RATED ESSAYS

	LOW-RATED ESSAYS (N = 11)		HIGH-RATED ESSAYS (N = 8)	
	Total Number	(% of Total Number)	Total Number	(% of Total Number)
GRAMMATICAL SUBJECTS	121		154	
Pronominal Subjects	98	(81%)	78	(51%)
Personal or Indefinite Pronominal Subjects	92	(76%)	54	(35%)
You	26	(21%)	0	(0%)
I	20	(17%)	7	(5%)
We	10	(8%)	1	(.7%)
Personal Subjects (e.g., person, kids, teacher, students)	15	(12%)	33	(21%)
Non-Personal Subjects	8	(6%)	43	(28%)
Words Used as Non-Personal Subjects	report card, world, answer, reason, department, test, material		purpose, jobs, society, doing well, education, type, state, test, Massachusetts, system, certificate, giving, testing, idea, majority, future, work, grades, schools, diploma, rate	

Table 2

Number of Each Type of Lexical Cohesive Tie, Number of Words Entering into Lexical Cohesive Ties, Number of Words, and Number of Different Words in Six Low-Rated and Six High-Rated Essays

	Type of Lexical Tie																Total Number of Lexical Ties		Number of Words Entering into Lexical Ties	Number of Words	Number of Different Words
	Repetition		Synonymy		Opposition		Inclusion		Derivation or Repetition of Derivational Element		Collocation		Double Ties								
Low-Rated Essays	A	W	A	W	A	W	A	W	A	W	A	W					A	W			
H-22	8	5	1	1	1	1	0	0	0	0	0	3	(1)				10	10	36	95	54
H-4	7	2	0	0	0	0	1	0	0	0	2	3	(0)				10	5	35	81	51
A-3	8	1	0	0	0	0	0	0	0	0	2	3	(0)				10	4	22	74	47
C-14	5	0	0	1	0	0	0	0	0	0	3	1	(0)				8	2	12	97	60
A-14	1	0	0	0	0	1	0	0	0	0	3	0	(0)				4	1	6	60	47
H-9	3	0	0	0	1	0	0	0	1	0	2	3	(0)				7	3	11	86	62
Total	32	8	1	1	2	2	1	0	1	0	12	13	(1)				49	25	122	491	321
High-Rated Essays																					
F-21	18	2	2	0	1	0	1	0	0	0	1	4	(0)				22	6	66	147	81
C-8	15	1	5	1	3	0	1	0	1	1	2	4	(2)				27	7	73	178	108
B-15	9	2	3	0	0	0	0	6	0	4	2	2	(6)				14	14	53	105	66
G-19	12	1	1	0	1	0	1	0	0	0	4	5	(2)				19	6	59	158	94
H-6	8	1	0	0	0	1	1	0	1	1	1	6	(1)				11	9	42	93	58
D-19	23	3	4	0	4	0	1	1	0	0	2	6	(8)				34	10	90	188	95
Total	85	10	15	1	9	1	5	7	2	6	12	27	(19)				127	52	383	869	502

A = across sentences
W = within sentences

APPENDIX

TOPIC: Many states now require students to demonstrate a certain level of skill on tests of reading, writing, and mathematics in order to receive their high school diploma. Only those students who pass the tests at the minimum level would receive a high school diploma. The states are giving a certificate of attendance instead of a diploma to those students who failed the tests and do not wish to continue in school any longer. The states are giving extra help to students who want to try to pass the tests a second time.

The state of Massachusetts is now considering giving such tests. Some are in favor of having these tests, and some are opposed. Take one side of this issue. Write an essay in which you state your position and defend it.

High-Rated Essay*

[1]Competency testing before receiving a high school diploma is beneficial to the student and everyone connected to the student. [2]A competency test will focus attention toward any student who has difficulty with one or more of the basic and valuable skills of reading, writing, and mathematics. [3]The students having difficulty can then receive additional aid and not miss the chance to learn the basic skills. [4]A high school diploma will benefit students more greatly than it has in the past because it assures any employer that his worker has the basic skills for the job.

Cohesive Item	Sentence Number	Presupposed Item	Sentence Number	Type**	Number of Words in Tie
high school diploma	1	Competency testing	1	C^W	4
student	1	diploma	1	C^W	2
student	1	student	1	R^W	2
competency test	2	Competency testing	1	R	4
student	2	student	1	R	2
difficulty	2	test	2	C^W	2
basic...skills	2	test	2	C^W	3
reading, writing, and mathematics	2	basic skills	2	C^W	6
the students having difficulty	3	any student who has difficulty	2	R	9
receive	3	receiving	1	R	2
aid	3	difficulty	2	C	2
basic skills	3	basic skills	2	R	4
high school diploma	4	high school diploma	1	R	2
benefit	4	beneficial	1	D	2

students	4	students	1	R	2
any employer	4	everyone connected to the student	1	I	7
worker	4	employer	4	O-D^{W}	2
basic skills	4	basic skills	3	R	4
job	4	worker	4	C^{W}	2

Ties Within Sentences = 9

Ties Across Sentences = 11

Double Ties = 1

Number of Words in All Ties = 42

High-Rated Essay*

[1]I believe the state of Massachusetts should give the competency tests to all students because it will give all students an incentive to come to school and it gives credit to only those students who have done the required work. [2]Some students come to high school only because they have to be there. [3]Now, with this system, one has to pay attention in school in order to pass the test given in his/her senior year. [4]All want to show that they have successfully completed their years in high school by graduating; therefore, they must study. [5]This test only gives credit to those who deserve it, which only seems fair. [6]As the present system works, it doesn't give enough credit to students who try harder than others, as all graduate that have gained enough credits and pass the needed subjects. [7]Some aren't ready still after completing the required work but are still handed the diploma! [8]Although, if the other system takes effect, each student must prove him/herself able to graduate. [9]This seems fairer to one who tries harder. [10]Overall, since the tests are already in other states, Massachusetts should begin giving them.

Cohesive Item	Sentence Number	Presupposed Item	Sentence Number	Type**	Number of Words in Tie
students	1	competency tests	1	C^{W}	3
all students	1	all students	1	R^{W}	4
school	1	students	1	C^{W}	2
only those students who have done the required work	1	all students	1	I-R-C^{W}	11
some students	2	all students	1	I-R	4
come to high school	2	come to school	1	R	6
school	3	high school	2	R	2
pass	3	tests	1	C	2

test given	3	give..tests	1	R	4
senior year	3	school	3	C^W	3
years	4	year	3	R	2
high school	4	school	3	C	2
graduating	4	high school	4	C^W	2
study	4	test	3	R	2
test	5	test	3	R	2
gives credit	5	gives credit	1	R	4
those who deserve it	5	only those students who have done the required work	1	S	12
present system	6	this system	3	R-O	4
doesn't give enough credit	6	gives credit	5	O-R	6
students who try harder than others	6	students who have done the required work	1	S-R	13
graduate	6	graduating	4	R	2
enough credits	6	enough credit	6	R^W	4
pass	6	pass	3	R	2
needed subjects	6	required work	1	S	4
completing the required work	7	done the required work	1	S-R	8
diploma	7	required work	7	C^W	3
other system	8	present system	6	O-R	4
each student	8	all students	1	R	4
graduate	8	graduate	6	R	2
seems fairer	9	seems fair	5	R	4
one who tries harder	9	students who try harder than others	6	R	10
tests	10	tests	1	R	2
other states	10	state of Massachusetts	1	O-R	5
Massachusetts	10	Massachusetts	1	R	2
giving	10	give	1	R	2

Ties Within Sentences = 10

Ties Across Sentences = 34

Double Ties = 8

Number of Words in All Ties =90

N.B. The analysis of cohesive ties does not pick up the inconsistency in the writer's argument. The writer favors giving competency tests because, in her view, they will give credit to only those who do the required work; yet, the writer frowns upon the present system for granting a diploma to those who do not have the necessary skills to graduate, even though they have done the required work.

Low-Rated Essay*

[1]I think if a person passes all 12 years of school and then fails to pass their test, that person will not be allowed to receive one's diploma. [2]It's wrong to have to take a test because some people freeze up and flunk the test even though the material on the test was known by that person. [3]Also people do forget material that was taught in the earlier years of school. [4]The test for one's diploma should be done away with in the states that use the test. [5]Also the test should not be allowed in Massachusetts.

Cohesive Item	Sentence Number	Presupposed Item	Sentence Number	Type**	Number of Words in Tie
12 years of school	1	passes	1	C^W	5
fails to pass	1	passes	1	$O\text{-}R^W$	4
test	1	pass	1	C^W	2
person	1	person	1	R^W	2
diploma	1	test	1	C^W	2
test	2	test	1	R	2
flunk	2	fails to pass	1	S	4
test	2	test	2	R^W	2
test	2	test	2	R^W	2
person	2	people	2	S^W	2
people	3	people	2	R	2
material	3	material	2	R	2
years of school	3	years of school	1	R	6
test	4	test	1	R	2
diploma	4	diploma	1	R	2
test	4	test	4	R^W	2
test	5	test	4	R	2
be allowed	5	be allowed	1	R	4
Massachusetts	5	states that use the test	4	O	6

Ties Within Sentences = 10

Ties Across Sentences = 10

Double Ties = 1

Number of Words in All Ties = 36

N.B. The analysis of cohesive ties in this essay also does not pick up the lack of coherence between the writer's first statement and the argument he develops. The writer intends to state in his opening sentence that it is wrong for a person not to be allowed to receive a diploma if he passes all 12 years of school, even though he fails to pass the test.

Low-Rated Essay*

[1]I think if a person gets promoted 12 times, he should graduate from high school. [2]Someone who didn't finish the 12 grades wouldn't receive a diploma. [3]When you finish the 12 grades, you deserve something to show that you accomplished something.

[4]It is very hard to go to school for 12 years all the time. [5]It is hard to keep your grades up every year. [6]So if you go and you pass, you should get promoted.

Cohesive Item	Sentence Number	Presupposed Item	Sentence Number	Type**	Number of Words in Tie
12 times	1	promoted	1	C^W	3
graduate	1	promoted	1	C^W	2
high school	1	graduate	1	C^W	2
12	2	12	1	R	2
diploma	2	graduate	1	C	2
finish	3	finish	2	R	2
12 grades	3	12 grades	2	R	4
something	3	something	3	R^W	2
school	4	high school	1	R	2
12	4	12	2	R	2
hard	5	hard	4	R	2
year	5	years	4	R	2
pass	6	school	4	C	2
promoted	6	promoted	1	R	2

Ties Within Sentences = 4

Ties Across Sentences = 10

Double Ties = 0

Number of Words in All Ties = 22

N.B. Again, an analysis of cohesive ties does not pick up the lack of coherence between the writer's final sentence and the argument he has developed. The writer probably intends to say "graduated," rather than "promoted," in the final sentence.

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*All essays have been edited for capitalization, punctuation, and spelling.

** R = repetition
S = synonymy
O = opposition
I = inclusion
D = derivation
C = collocation

The superscript w indicates that the tie is within a sentence.